

WHAT IS CLAIMED IS:

1. A computer system comprising:
  - a plurality of processing resources operable to process data;
  - 5 a plurality of power supplies associated with the processing resources, the power supplies operable to supply power to the processing resources; and
  - 10 a resource management engine associated with the processing resources, the resource management engine operable to scale the number of the processing resources in relation to a plurality of demand requirements.
- 15 2. The system of Claim 1 wherein the processing resources comprise mobile processors.
3. The system of Claim 1 wherein the processing resources comprise hard disk drives.
- 20 4. The system of Claim 1 wherein the resource management engine scales the number of processing resources in accordance with an enterprise-wide power management strategy.
- 25 5. The system of Claim 1 wherein the resource management engine scales the number of processing resources by powering up additional processing resources.
- 30 6. The system of Claim 1 wherein the resource management engine scales the number of processing resources by powering down the processing resources.

7. The system of Claim 6 wherein the resource management engine powering down the processing resources comprises powering off the processing resource.

5

8. The system of Claim 6 wherein the resource management engine powering down the processing resources comprises reducing the processing resource to a lower power state.

10

9. The system of Claim 1 further comprising a plurality of capacity tables associated with the resource management engine, the capacity tables operable to store a plurality of information regarding the processing resources and the power supplies.

15

10. The system of Claim 1 further comprising a plurality of dynamic tables associated with the resource management engine, the dynamic tables operable to store a plurality of predictive analysis information.

20

11. The system of Claim 1 wherein the processing resources comprise a plurality of servers.

25

12. The system of Claim 1 wherein the processing resources comprise a plurality of racks containing a plurality of servers.

13. The system of Claim 1 further comprising the resource management engine predicting demand requirements.

5 14. The system of Claim 1 further comprising the resource management engine maintaining a power threshold among the processing resources and power supplies.

15. A method for the optimizing of power consumption by a computer system, the method comprising:  
receiving a demand requirement;  
determining if the demand requirement requires a  
5 processing resource change; and  
adjusting a plurality of processing resources to satisfy the demand requirement.

16. The method of Claim 15 wherein determining if  
10 the demand requirement requires a processing resource change comprises consulting a plurality of capacity tables.

17. The method of Claim 15 wherein determining if  
15 the demand requirement requires a processing resource change comprises deciding whether to power up additional processing resources.

18. The method of Claim 15 wherein determining if  
20 the demand requirement requires a processing resource change comprises deciding whether to power down processing resources.

19. The method of Claim 15 wherein adjusting a  
25 plurality of processing resources comprises powering down processing resources when the demand requirement decreases.

20. The method of Claim 19 wherein powering down processing resources comprises turning off one or more processing resources.

5        21. The method of Claim 19 wherein powering down the processing resources comprises powering the processing resources to a lower power state.

10      22. The method of Claim 15 wherein adjusting a plurality of processing resources comprises powering up additional processing resources when the demand requirement increases.

15      23. The method of Claim 22 wherein powering up additional processing resources comprises integrating the additional processing resource with the already operating processing resources.

20      24. The method of Claim 15 further comprising: predicting future demand requirements; and adjusting the processing resources to meet the future demand requirements.

25      25. The method of Claim 24 wherein predicting demand requirements comprise consulting a plurality of dynamic tables.

30      26. The method of Claim 15 further comprising maintaining a power threshold in the processing resources.

27. A method for managing power consumption in a computer system, the method comprising:

    storing historical data in a plurality of dynamic tables;

5       predicting future demand requirements using the historical data in the dynamic tables;

    determining if a processing resource change is needed to efficiently meet the future demand requirements; and

10      adjusting a plurality of processing resources in advance to meet the future demand requirements.

28. The method of Claim 27 wherein predicting future demand requirements comprises dynamically adjusting for global occurrences that affect demand requirements.

29. The method of Claim 27 wherein the historical data comprises load data from a plurality of demand requirements from previous time periods.

30. The method of Claim 27 wherein adjusting the processing resources in advance comprises powering up additional processing resources to address the future demand requirements.